Edgewood Area - Aberdeen Proving Ground, Maryland 21010-5424
U.S. Army Soldier and Biological Chemical Command

Optical Sensor Experimental and Development Laboratory

CAPABILITIES:

- Fabricated and tested two LIDAR breadboard systems to investigate laser-induced fluorescence of biological contaminants.
- Transitioned UV LIDAR technology into engineering development.
- Fabricated and tested a point sensor concept based on laser-induced fluorescence.
- Ultraviolet differential absorption LIDAR (DIAL).
- Propagation of ultraviolet laser radiation in the troposphere.
- Raman scatter properties of biological compounds.
- Investigation of depolarized scatter from tropospheric aerosols.
- Lasers that provide output from the deep ultraviolet to the near infrared.
- Opto-mechanical system development capability.
- Containment facilities for biological and chemical agent simulants.
- Several vehicles for Light Detection and Ranging (LIDAR) system transport.

For the past several years, scientists have performed tests at the Optical Sensor Experimental and Development Laboratory, primarily to investigate chemical and biological contaminants in the air. The Light Detection and Ranging (LIDAR) systems, laser based point sensors, and experimental facilities were developed to conduct such tests. LIDAR systems and laser equipment examine the optical properties of contaminants in the laboratory and the field. LIDAR systems, which have been integrated into ground and airborne platforms, have been used extensively to test and analyze airborne contaminants and constituents of almost any variety.

Lasers can be integrated into a LIDAR system and mounted in a laboratory-owned vehicle to perform an on-site analysis of aerosols or particles found in the air. Laser systems have also been integrated into aircraft, both fixed and rotary wing. This allows for a preliminary analysis on aerosols in the laboratory, followed by an examination of controlled concentrations of aerosols in a field-portable chamber.

Although the Optical Sensor Experimental and Development Laboratory is primarily used for the detection of biological agents, it can also be used to track volcanic activity by monitoring material ejected into the atmosphere; for preventative detection of air pollution inside and outside of building structures; identification of disease-causing agents in the environment and food handling facilities; and countless other experimental investigations involving pollen, rusts, fungi, smuts, and naturally occurring aerosols.

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For more information on Technology Transfer applications, please contact Director, Edgewood Chemical Biological Center, ATTN: AMSSB-RAS-C, Aberdeen Proving Ground, MD 21010-5424. Telephone (410) 436-4438 or fax (410) 436-6529.

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